Jacek GONDZIO
(University of Edinburgh)

« Interior Point Methods for Very Large Scale Optimization »

Interior point methods (IPMs) have been around for 30 years and have completely changed the field of optimization. In this series of lectures we will focus on major features responsible for the spectacular efficiency of IPMs when applied to the solution of very large problems. Those include:

- nice properties (self-concordance) of logarithmic barriers which deliver the polynomial complexity of IPMs,

- a unified view of IPMs for linear, quadratic, convex nonlinear, second-order cone and semidefinite programming.

If time permits we will also briefly comment on the most spectacular applications of IPMs.